

**P.E.S. College of Engineering, Mandya - 571 401****(An Autonomous Institution affiliated to VTU, Belagavi)****Sixth Semester, B.E. - Industrial and Production Engineering****Semester End Examination; July / Aug. - 2022****World Class Manufacturing**

Time: 3 hrs

Max. Marks: 100

Course Outcomes*The Students will be able to:**CO1: Recognize different framework models followed by quality Guru's and the principles of WCM and practices used in factory.**CO2: Importance of Data Collection method used and tools used in factory while implementing WCM.**CO3: Analyze the different methods of benchmarking process, and significance of value stream mapping.**CO4: Recognize fundamental concept of reengineering and quality system and important of ISO in manufacturing industries.**CO5: Employee and Six Sigma concepts in industries and impact of activity based management and theory of constraints.***Note: I) PART - A is compulsory. Two marks for each question.****II) PART - B: Answer any Two sub questions (from a, b, c) for a Maximum of 18 marks from each unit.**

| Q. No. | Questions | Marks | BLs | COs | POs |
|----------------------|---|-----------|-----|-----|-----|
| I : PART - A | | 10 | | | |
| I a. | Mention any two methods from the first principles of world class manufacturing. | 2 | L1 | CO1 | PO1 |
| b. | Sketch a simple value stream map. | 2 | L1 | CO2 | PO1 |
| c. | Mention any 2 objectives of benchmarking. | 2 | L1 | CO3 | PO1 |
| d. | Mention the 3C'S of reengineering. | 2 | L1 | CO4 | PO1 |
| e. | DMAIC stands for..... from six sigma perspective. | 2 | L1 | CO5 | PO1 |
| II : PART - B | | 90 | | | |
| UNIT - I | | 18 | | | |
| 1 a. | Discuss the Hall's framework of value added engineering from world class manufacturing prospective. | 9 | L3 | CO1 | PO1 |
| b. | Explain the Gunn's model of world class manufacturing. | 9 | L2 | CO1 | PO1 |
| c. | Explain the following with respect to world class management: | | | | |
| | i) The customer interface | 9 | L2 | CO1 | PO1 |
| | ii) The supply interface | | | | |
| UNIT - II | | 18 | | | |
| 2 a. | Discuss about the data collection plan used in world class management. | 9 | L3 | CO3 | PO1 |
| b. | Discuss the material handling tools used in a world class manufacturing setup. | 9 | L3 | CO2 | PO1 |
| c. | Explain flexible manufacturing system and its function in bringing world class manufacturing. | 9 | L2 | CO2 | PO1 |

UNIT - III**18**

- 3 a. Explain with suitable example the concept of bench marking. 9 L2 CO3 PO1
- b. Discuss the matrices and phases adapted to benchmark the processes in industry. 9 L3 CO3 PO1
- c. How the candidate list and performance measures are developed in the bench marking process? Explain. 9 L2 CO3 PO1

UNIT - IV**18**

- 4 a. Explain the concept of reengineering and clearly discuss the 3C practices adopted by the industry. 9 L2 CO4 PO1
- b. Explain the concept of rethinking and discuss with suitable case example. 9 L2 CO4 PO1
- c. Explain with suitable example the quality systems followed by industry in bringing ISO 9000 series and ISO 14000 series. 9 L2 CO4 PO1

UNIT - V**18**

- 5 a. Explain with suitable example Six Sigma concept and discuss briefly the DMAIC concept. 9 L2 CO5 PO1
- b. Compare the traditional cost system with activity based costing. 9 L3 CO5 PO1
- c. Explain the concept of theory of inventive problem solving with suitable example. 9 L2 CO5 PO1

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